ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES, TIRUPATI
(AUTONOMOUS)
DEPARTMENT OF ARTIFICIAL INTELLIGENCE & DATA SCIENCE (AI D)
COURSE OUTCOMES (CO'S)
AK20 REGULATION

COURSE NAME	COURSE OUTCOMES	
Algebra and Calculus (20ABS9901)	CO1 :	Develop the use of matrix algebra techniques that is needed by engineers for practical applications.
	CO2:	Utilize mean value theorems to real life problems.
	CO3:	Familiarize with functions of several variables which is useful in optimization.
	CO4:	Students will also learn important tools of calculus in higher dimensions. Students will become familiar with 2- dimensional coordinate systems
	CO5:	Students will become familiar with 3- dimensional coordinate systems and also learn the utilization of special functions
Applied Physics LAB(20ABS9902)	CO1:	Analyze the wave properties of light and the interaction of energy with the matter.
	CO2:	Apply electromagnetic wave propagation in different guided media
	CO3:	Asses the electromagnetic wave propagation and its power in different media
	CO4:	Analyze the conductivity of semiconductors.
	CO5:	Interpret the difference between normal conductor and superconductor and apply the nanomaterial's for engineering applications
Communicative English (20AHS9901)	CO1:	Identify the context, topic, and pieces of specific information from social or transactional dialogues spoken by native speakers of English
	CO2:	Formulate sentences using proper grammatical structures and correct word forms
	CO3:	Speak clearly on a specific topic using suitable discourse markers in informal discussions
	CO4:	Write summaries based on global comprehension of reading/listening texts
	CO5:	Produce a coherent paragraph interpreting a figure/graph/chart/table
	CO6:	Take notes while listening to a talk/lecture to answer questions
Engineering Graphics (20AES0301)	CO1:	Draw various curves applied in engineering.
	CO2:	Show projections of solids and sections graphically.
	CO3:	Draw the development of surfaces of solids.
	CO4:	Use computers as a drafting tool.
	CO5:	Draw isometric and orthographic
Problem Solving and Programming (20AES0501)	CO1:	Construct his own computer using parts.
	CO2:	Recognize the importance of programming language independent constructs
	CO3:	Solve computational problems
	CO4:	Select the features of C language appropriate for solving a problem
	CO5:	Design computer programs for real world problems
	CO6:	Organize the data which is more appropriated for solving a problem
Communicative English Lab (20AHS9902)	CO1:	Remember and understand the different aspects of the English language proficiency with emphasis on LSRW skills
	CO2:	Apply communication skills through various language learning activities
	CO3:	Analyze the English speech sounds, stress, rhythm, intonation and syllable division for better listening and speaking comprehension.
	CO4:	Evaluate and exhibit acceptable etiquette essential in social and professional settings.
	CO5:	Create awareness on mother tongue influence and neutralize it in order to improve fluency in spoken English
Applied Physics Lab (20ABS9907)	CO1:	Analyze the wave properties of light and the interaction of energy with the matter.
	CO2:	Apply electromagnetic wave propagation in different guided media.
	CO3:	Asses the electromagnetic wave propagation and its power in different media

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	CO4:	Analyze the conductivity of semiconductors
	CO5:	Interpret the difference between normal conductor and superconductor and apply the nanomaterials for engineering applications
Problem Solving And Programming Lab (20AES0503)	CO1:	Construct a Computer given its parts
	CO2:	Select the right control structure for solving the problem
	CO3:	Analyze different sorting algorithms
	CO4:	Design solutions for computational problems
	CO5:	Develop C programs which utilize the memory efficiently using programming constructs like pointers.
Probability And Statistics (20ABS9911)	CO1:	Interpret the association of characteristics and through correlation and regression tools.
	CO2:	Make use of the concepts of probability and their applications.
	CO3:	Apply discrete and continuous probability distributions.
	CO4:	Design the components of a classical hypothesis test for large sample.
	CO5:	Design the components of a classical hypothesis test for small samples.
Numarical Methods (20ABS9921)	CO1:	Analyze the concepts of Errors, Relative and Percentage Errors
	CO2:	Analyze the concepts of Algebraic & Transcendental Equations to solve different Engineering problems
	CO3:	Analyze Interpolation using the concepts of the Numerical Methods
	CO4:	Apply the concepts of Integration in Numerical Methods
	CO5:	Apply the concepts of O.D.E on Numerical Methods
Basics of Python Programming (20AES0509)	CO1:	Apply the features of Python language in various real applications.
	CO2:	Select appropriate data structure of Python for solving a problem.
	CO3:	Design object oriented programs using Python for solving real-world problems.
	CO4:	Apply modularity to programs
Data Structures (20AES0502)	CO1:	Select Appropriate Data Structure for solving a real world problem
	CO2:	Select appropriate file organization technique depending on the processing to be done
	CO3:	Construct Indexes for Databases
	CO4:	Analyse the Algorithms
	CO5:	Develop Algorithm for Sorting large files of data
Web Design (20AES0507)	CO1:	Ability to create dynamic and interactive websites
	CO2:	Gain knowledge of client side scripting using java script and DHTML.
	CO3:	Demonstrate understanding of what is XML and how to parse and use XML data
	CO4 :	Able to do server side programming with Java Servelets, JSP and PHP.
	CO5:	Able to design rich client presentation using AJAX.
Basics of Python Programming Lab(20AES0510)	CO1:	Design solutions to mathematical problems.
	CO2:	Organize the data for solving the problem.
	CO3:	Develop Python programs for numerical and text based problems.
	CO4:	Select appropriate programming construct for solving the problem.
	CO5:	Illustrate object oriented concepts.
Computational Lab (20ABS9918)	CO1:	To understand solving problems in linear algebra using MS-Excel's Tools.
	CO2:	To analyse Central Tendency, Dispersion, Correlation and Regression analysis as basics of Statistics using Ms- Excel's Tools.
	CO3:	To understand properties of probability distributions and to perform using Ms Excel
	CO4:	Solving problems in Definite integrals numerically using Trapezoidal and Simpson's methods in Ms-Excel's Tools.
	CO5:	To analyse Statistics to solve large samples and Small samples problems using Statistical Tools practicing in Ms-Excel's Tools.
Data	CO1:	Select the data structure appropriate for solving the problem

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Structures Lab (20AES0504)	CO2:	Implement searching and sorting algorithms
	CO3:	Design new data types
	CO4 :	Illustrate the working of stack and queue
	CO5:	Organize the data in the form of files
Environmental Studies (20AMC9903)	CO1:	Students get sufficient information that clarifies modern environmental concepts like equitable use of natural resources, more sustainable life styles etc.
	CO2:	Students realize the need to change their approach, so as to perceive our own environmental issues correctly, using practical approach based on observation and self learning
	CO3:	Students become conversant with the fact that there is a need to create a concern for our environment that will trigger pro-environmental action; including simple activities we can do in our daily life to protect it.
	CO4:	Interpretation of different types of environmental pollution problems and designing of new solid waste management techniques usage
	CO5:	To get knowledge on various environmental acts and to engage all the students life - long learning of rain water harvesting
Discrete Mathematical Structures (20ABS9914)	CO1:	Apply mathematical logic to solve problems
	CO2:	Understand the concepts and perform the operations related to sets, relations and functions.
	CO3:	Gain the conceptual background needed and identify structures of algebraic nature.
	CO4:	Apply basic counting techniques to solve combinatorial problems.
	CO5:	Formulate problems and solve recurrence relations.
	CO6:	Apply Graph Theory in solving computer science problems
Digital Electronics & Microprocessors (20APC3001)	CO1:	Design any Logic circuit using basic concepts of Boolean algebra.
	CO2:	Design any Logic circuit using basic concepts of PLDs.
	CO3:	Design and develop any application using 8086 Microprocessor.
	CO4:	Design and develop any application using 8051 Microcontroller
Database Management Systems (20APC3002)	CO1:	Design a database for a real-world information system
	CO2:	Define transactions that preserve the integrity of the database
	CO3:	Generate tables for a database
	CO4:	Organize the data to prevent redundancy
	CO5:	Pose queries to retrieve the information from the database.
Object Oriented Programming through JAVA (20APC3004)	CO1:	Understanding the Syntax, Semantics and features of Java Programming Language.
	CO2:	To gain knowledge on Object Oriented Programming concepts.
	CO3:	Design the method of creating Multi-threading programs and handle exceptions.
	CO4:	Understanding the concepts of java Collection Framework, Applets.
	CO5:	Ability to create GUI applications & perform event handling.
Computer Organization (20APC3006)	CO1:	Understand computer architecture concepts related to the design of modern processors, memories and I/Os
	CO2:	Identify the hardware requirements for cache memory and virtual memory
	CO3:	Design algorithms to exploit pipelining and multiprocessors
	CO4:	Understand the importance and trade-offs of different types of memories.
	CO5:	Identify pipeline hazards and possible solutions to those hazards
Database Management Systems Laboratory (20APC3003)	CO1:	Design database for any real world problem
	CO2:	Implement PL/SQL programs
	CO3:	Define SQL queries
	CO4:	Decide the constraints
	CO5:	Investigate for data inconsistency
Object Oriented Programming through JAVA	CO1:	To experiment with the syntax and semantics of java language and gain experience with java programming

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Lab (20APC3004)	CO2:	Learn to use object orientation to solve problems and use java language to implement them.
Computer Organization Lab (20APC3007)	CO1:	Represent numbers and perform arithmetic operations.
	CO2:	Minimize the Boolean expression using Boolean algebra and design it using logic gates
	CO3:	Analyze and design combinational circuit.
	CO4:	Design and develop sequential circuits
	CO5:	Understand and apply the working of different operations on binary numbers
Client Side Scripting (20ASC3001)	CO1:	Analyze and understand the basic concepts of web programming.
	CO2:	Apply techniques of form validation using Java Script.
	CO3:	Describe important concepts related to client side Web Security.
	CO4:	Demonstrate the function of Hypertext Markup Language (HTML) in Web communications.
	CO5:	Develop the function of JavaScript as a dynamic webpage creating tool
Constitution Of India (20AMC9902)	CO1:	Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.
	CO2:	Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India
	CO3:	Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution.
	CO4:	Discuss the Powers and functions of Governor, President, Judiciary
	CO5:	Discuss the functions of local administration bodies
Formal Languages and Automata Theory (20APC3008)	CO1:	Demonstrate knowledge on Automata Theory, Analyze and Design of finite automata, and prove equivalence of various finite automata.
	CO2:	Demonstrate knowledge on Regular Expression, Analyze and design of regular expressions from regular languages, and prove the equivalence
	CO3:	Demonstrate knowledge on context free grammar, Analyze and design of CFG from CFL, simplifications of CFG by applying various Normal Forms
	CO4:	Analyze and design of PDA and prove the equivalence of languages described by pushdown automata and context free grammars
	CO5:	Demonstrate knowledge on Turing Machine, analyze & design of Turing machine, problems with undecidability
Computer Networks (20APC3009)	CO1:	Understand the basics of data communications and networking
	CO2:	Classify the functionalities of two sub layers of Data link Layer
	CO3:	Know briefly about Network Layer through algorithms and protocols
	CO4:	Distinguish the services provided by Transport Layer
	CO5:	Recognize the services offered by Application Layer to the user
Data warehousing and Mining (20APC3011)	CO1:	Understand the basic concepts of data warehouse and data mining
	CO2:	Apply pre-processing techniques for data cleansing
	CO3:	Analyze and evaluate performance of algorithms for Association Rules
	CO4:	Analyze Classification and Clustering algorithms.
	CO5:	Enhance the knowledge on mining different streams.
Operating Systems (20APC3013)	CO1:	Distinguish between the different types of operating system environments.
	CO2:	Apply the concepts of process synchronization & CPU scheduling
	CO3:	Develop solutions to deadlock and memory management
	CO4:	Analyze various disk scheduling algorithms and file system interfaces
	CO5:	Analyze the various security issues and goals of protection
Managerial Economics And Financial	CO1:	Understand the fundamentals of Economics and Managerial economics viz.,Demand, Production, cost, revenue and markets.
	CO2:	Apply the Concept of Production cost and revenues for effective Business decision
	CO3:	Analyze how to invest their capital and maximize returns.

COURSE NAME	COURSE OUTCOMES	
Analysis (20AHSMB01)	CO4:	Evaluate the capital budgeting techniques.
	CO5:	Define the concepts related to financial accounting and management and able to develop the Accounting statements and evaluate the financial performance of business entity
Universal Human Values (20AHS9905)	CO1:	Students are expected to become more aware of themselves, and their surroundings (family, society, nature)
	CO2:	They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
	CO3:	They would have better critical ability
	CO4:	They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
	CO5:	It is hoped that they would be able to apply what they have learnt to their own self in different day- to-day settings in real life, at least a beginning would be made in this direction.
Computer Networks Lab (20APC3010)	CO1:	Deal with Error detection/ correction techniques
	CO2:	Learn about Data link layer protocols
	CO3:	Learn about network layer protocols
	CO4:	Able to get knowledge about simulator
Data warehousing and Mining Lab (20APC3012)	CO1:	the student will be able to Learn how to use different data mining tools.
	CO2:	Learn to execute data mining tasks using a data mining toolkit (Orange data mining tool kit) and visualize the results.
	CO3:	Understanding linear regression model in the orange environment
	CO4:	Demonstrate the working of algorithms for data mining tasks such association rule mining, classification and clustering.
	CO5:	Demonstrate the usage of Silhouettes.
Operating Systems Lab (20APC3014)	CO1:	Ensure the development of applied skills in operating systems related areas.
	CO2:	Able to write software routines modules or implementing various concepts of operating system
Server Side Scripting (20ASC3002)	CO1:	Learn the installation guide of MYSQL,XAMPP5,APACHE and PHP
	CO2:	Able to design code for simple dynamic web pages
	CO3:	Design PHP and SQL/MySQL Integration.
	CO4:	Design Basic Projects like Creating an Online Address Book - Creating a Simple Discussion Forum etc.
	CO5:	Able to provide protection to web server